



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,242	01/10/2002	Timothy M Coker	124-865	7056

23117 7590 05/19/2004

NIXON & VANDERHYE, PC
1100 N GLEBE ROAD
8TH FLOOR
ARLINGTON, VA 22201-4714

EXAMINER

LANEAU, RONALD

ART UNIT	PAPER NUMBER
----------	--------------

2674

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,242

Applicant(s)

COKER ET AL.

Examiner

Ronald Laneau

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,7 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

1. The amendment filed on 03/03/04 has been entered. Claims 4-6 and 8 are canceled, new claim 11 is added and claims 1-3, 7, and 9-11 are now pending.

Drawings

2. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2674

5. Claims 1-3, 7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strohacker (US 6,320,986) in view of Gale et al (US 5,737,038) and further in view of Doherty et al (US 5,657,099).

As per claims 1, 3, 7, and 11, Strohacker teaches a system and method of preprocessing multiple bit per pixel sampled data for lossless Lempel-Ziv compression whereby data stored in a frame buffer is transposed from a pixel based format to a bit plane based format before compression. Regrouping of the sampled video data from groups and strings referenced by pixel to groups and strings by bit plane materially improves the compressibility of the data by segregating the most significant bits and the least significant bits (col. 2, lines 30-38). Further, Strohacker teaches a conventional frame buffer implemented RGB or grey scale video drive system, such as would be used to control a display. The processor generates graphical images on a pixel basis and provides the data for the individual pixels over system bus 8 to VRAM array configured frame buffer memory 9. The individual bit planes 11 of the frame buffer store the individual bit information by pixel position from a most significant bit (MSB) plane to a least significant bit (LSB) plane (col. 3, line 67 to col. 4, line 8, fig. 3). Fig. 5 shows an example of a binary string from the least significant bit to the most significant bit. Strohacker does not teach binary strings associated with the highest weightings stored in memory but Gale et al teach bit-plane displays having special data sequences specifying the order of display times, or segments of display times, for each bit-weight of a pixel. One sequence for 8-bit intensity data might be 7,6,5,4,3,2,1,0, where the display times for each bit-weight occur in descending order during the frame (col. 5, lines 4-9). Neither Strohacker nor Gale teaches a method whereby bit planes are read out in order of decreasing weighting but Doherty et al teach a bit memory 13b that operates

Art Unit: 2674

as a first-in, first-out buffer such that bit-planes are read-out from their memory planes to SLM 13c in the same order as they are written in (col. 5, lines 9-12).

It would have been obvious to one of ordinary skill in the art to utilize the bit-plane displays with bit-weights taught by Gale et al into the device of Strohacker because it would improve the quality of the images of a display system by eliminating artifacts and also reducing the effects of periodicity between data of different colors during a frame period (col. 2, lines 43-45). And it would have been obvious to one of ordinary skill in the art to utilize the bit-planes read-out as taught by Doherty into the combined device of Strohacker and Gale et al because it would increase the storage space of the bit planes since bit planes are being read while the others are being written.

As per claim 2, Strohacker teaches a sequence for 8-bit intensity that qualifies as a multi-bit intensity as claimed (col. 5, line 7).

As per claim 9, a method of imaging wherein the bit planes are displayed on a pixellated liquid crystal display is well known in the art.

As per claim 10, Doherty et al teach a period wherein bit planes are not being written whether or not an ac potential is applied to the pixels as claimed (col. 5, lines 12-14, fig. 3).

Response to Arguments

6. Applicant's arguments filed on 03/03/04 have been fully considered but they are not persuasive.

Applicant's arguments about Gale not teaching bit planes that are read out in order of decreasing weighting in a plurality of read-out cycles are moot in view of the newly added

Art Unit: 2674

reference of Doherty et al. ~~Therefore, the rejection finally stands in view of the now added claim~~
~~11.~~

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email: ronald.laneau@uspto.gov.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


Application/Control Number: 09/868,242

Page 6

Art Unit: 2674

Ronald Laneau
Examiner
Art Unit 2674

rl
May 10, 2004


RICHARD HJERPE 5/14/04
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600